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10/059,140	01/31/2002	Jarmo Parkkinen	3502-1004	5989
466	7590	01/17/2006	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			LU, KUEN S	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/059,140

Applicant(s)

PARKKINEN, JARMO

Examiner

Kuen S. Lu

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 17, 26-35 and 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, 17, 26-35 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 14, 2005 has been entered.

Response to Amendments

2. The Action is responsive to the Applicant's Amendments, filed on November 15, 2005.
3. Noted and considered is Applicant's amendments made to the claims 1-2, 14, 17, 26 and 34 for clarity reasons. Also noted and considered is the newly added claim 43 and currently cancelled claims 13, 15-16, 18-25 and 36-42.
4. As for the Applicant's Remarks on claim rejections, filed on June 14, 2005, has been fully considered by the Examiner, please see discussion in the section ***Response to Arguments***, following the Office Action for non-Final Rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 34, the language "means for initiating synchronizes data in the second database with data in said database is generally indefinite, failing to conform with current U.S. practice. The grammatical and idiomatic errors appear to be caused by the process of amending the claim. The Examiner interprets the claim as "means for synchronizing data in the second database with data in said first database".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained although the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-9, 14, 17, 26-30, 34-35 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over OraRep (Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®, hereafter "OraRep").

As per claims 1 and 26, OraRep teaches the following:

“serially aligning database transactions comprising at least two databases coupled to their associated database management systems” (See Pages 1-11, last 4 lines and 8-14, Par. Serialization of Transactions wherein OraRep’s two master sites databases replication and serial aligning of database transactions is equivalent to the Applicant’s **serially aligning database transactions comprising at least two databases coupled to their associated database management systems**);

“initiating the first transaction in the first database” (See Fig. 4-1 on Page 4-24 wherein OraRep’s row-level replication starting at the first transaction at the first database is equivalent to the Applicant’s **initiating the first transaction in the first database**); and

“linking into the first transaction at least one transaction trigger that is a deferred database operation defined in the first transaction” (See Page 1-12, Section Deferred Transactions and Page 2-3, Para. Asynchronous wherein OraRep’s local database change fires a generated trigger for building a remote procedure call and storing the call to a deferred transaction queue scheduled to be executed to call remote database to execute a package procedure at remote database is equivalent to the Applicant’s **linking into the first transaction at least one transaction trigger that is a deferred database operation defined in the first transaction**).

OraRep does not explicitly teach that the transaction trigger “to be executed after successful completion of the first transaction”.

However, post-triggering where a trigger is fired after associated transaction has been completed successfully is well known to an ordinary skilled in the art.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention was made to combine OraRep's teaching of trigger, deferred operation and well-known post-triggering transaction by explicitly substituting the trigger with a post-trigger because the combination and substitution of teaching would have guaranteed a change be successfully applied to both local and remote databases for avoiding the rollback of changes which would be disastrous to system performance.

OraRep further teaches the following:

"ending said first transaction in the first database" (See Fig. 4-1 on Page 4-24 and Page 3-10, Section The Internals of Snapshot Log Creation wherein OraRep's site triggers fired in the site A first after transaction is successfully completed in a post-triggering implementation is equivalent to the Applicant's **ending said first transaction in the first database**);

"firing at least one said trigger is fired in at least one first database" by database updating, deleting and inserting transactions (See Fig. 4-1 on Page 4-24 and Page 3-10, Section The Internals of Snapshot Log Creation wherein OraRep's site triggers fired in the site A first is equivalent to the Applicant's **firing at least one said trigger is fired in at least one first database**); and

"immediately after the ending and firing steps are completed, the deferred database operation initiating and at least one second transaction to synchronize data in at least one second database from at least one first database in the first database, the second transaction initiating a remote database transaction at least one second database" (See Page 2-3, Section Asynchronous and Fig. 4-1 on Page 4-

24, wherein OraRep's remote procedures are created and triggered to invoke database transactions at the Site B and vice versa because both Sites A and B are replicated masters and the changes are to take place immediately for avoiding inconsistencies between databases is equivalent to the Applicant's **immediately after the ending and firing steps are completed, the deferred database operation initiating and at least one second transaction to synchronize data in at least one second database from at least one first database in the first database, the second transaction initiating a remote database transaction at least one second database).**

As per claim 2, OraRep teaches "**wherein the trigger is for at least one data manipulation operation**" (See Page 1-13 wherein OraRep's trigger builds deferred procedure call to execute a packaged procedure at the remote site for propagating database change is equivalent to the Applicant's **wherein the trigger is for at least one data manipulation operation).**

As per claim 3, OraRep teaches "**the execution of the second transaction is blocked until the said trigger fires**" (See Page 1-12 where a first master site database fires trigger as local database change occurs. The trigger builds a remote procedure call to a packaged procedure at site B. It is thus transaction is blocked until the trigger fires and remote procedures is executed at master site B is equivalent to the Applicant's **the execution of the second transaction is blocked until the said trigger fires).**

As per claim 4, OraRep teaches **“a database system comprises at least one master database and at least one replica database, and the data synchronization between the master and replica databases is master-initiated”** (See Page 1-4 wherein OraRep’s master site propagates or pushes its changes to every other master sites for the replication group for the master-initiated is equivalent to the Applicant’s **a database system comprises at least one master database and at least one replica database, and the data synchronization between the master and replica databases is master-initiated**).

As per claims 5 and 28, OraRep teaches **“transactionally consistent set of data in a database comprises configuration data”** (See Pages 4-30, 8-16 and 8-17 wherein OraRep’s when a local database change occurs, a trigger is fired to build deferred calls to generate procedures at the remote site and user procedure wrappers to build deferred transactions including configuration data of locking, disabling and enabling replication of database objects to support the database data changes is equivalent to the Applicant’s **transactionally consistent set of data in a database comprises configuration data**).

As per claim 6, OraRep teaches **“the device changes its configuration to reflect the changed data right after the data has committed in the database”** (See Page 1-15 wherein OraRep’s database changes must be replicated to all replicated sites, or rollback occurs to restore the databases back to a consistent state prior to the change is

equivalent to the Applicant's **the device changes its configuration to reflect the changed data right after the data has committed in the database**).

As per claim 7, OraRep teaches **"the related software processes, like other database server or a client application, are informed about transactional changes by the data management server"** (See Page 13-15 wherein OraRep's DefTran view records all deferred transactions is equivalent to the Applicant's **the related software processes, like other database server or a client application, are informed about transactional changes by the data management server**).

As per claim 8, OraRep teaches **"the method executes tasks and operations in a database transaction context"** (See Page 4-26 where local database change fires triggers to build deferred calls to generate procedures at the remote master sites, procedural replication uses procedures to build deferred transaction and propagation of deferred transactions is controlled by job queue processes and the steps as described are all in the database transaction context is equivalent to the Applicant's **the method executes tasks and operations in a database transaction context**).

As per claim 9, OraRep teaches **"transactions are executed in separate database connections or in a shared connection with another said transaction or another transaction"** (See Page 4-26 wherein OraRep's local database change fires triggers to build deferred calls to generate procedures at the remote master sites, procedural

replication uses procedures to build deferred transaction and propagation of deferred transactions is controlled by job queue processes is equivalent to the Applicant's **transactions are executed in separate database connections or in a shared connection with another said transaction or another transaction).**

As per claim 17, OraRep teaches **"a database system comprises at least one master database and at least one replica database, the push synchronization data between the master and replica databases is master-initiated and pull synchronization data between the master and replica databases is replica-requested"** (See Pages 1-4 and 4-26 wherein OraRep's master site propagates, or pushes its changes to every other master sites for the replication group for the master-initiated and manually pushes the changes made at a given master site by calling the EXECUTE procedure to forward any changes made since the last time changes were propagated from the site, either manually or automatically is equivalent to the Applicant's **a database system comprises at least one master database and at least one replica database, the push synchronization data between the master and replica databases is master-initiated and pull synchronization data between the master and replica databases is replica-requested).**

As per claim 27, OraRep teaches **"comprising at least one master database and one replica database coupled to associated database management systems"** (See Pages 1-11, last 4 lines and 8-14, Par. Serialization of Transactions wherein OraRep's

two master sites databases replication and serial aligning of database transactions is equivalent to the Applicant's **comprising at least one master database and one replica database coupled to associated database management systems**);

As per claim 29, OraRep teaches "**at least the second database can be part of a router coupled to the application**" (See Page 1-2 wherein OraRep's second database is replicated with data changes originated from a first database, and the changed data is available for application connecting to a second database is equivalent to the Applicant's **at least the second database can be part of a router coupled to the application**).

As per claim 34, OraRep teaches "**means for synchronizing data in the second database with data in said first database**" (See Page 1-4 wherein OraRep's master site propagates or pushes its changes to every other master sites for the replication group for the master-initiated is equivalent to the Applicant's **means for synchronizing data in the second database with data in said first database**).

As per claims 14 and 35, OraRep teaches "**the set of data of the second transaction comprises data for performing push-style or push-pull-style synchronization**" at Page 1-4 where the master site propagates, or pushes its changes to every other master sites for the replication group for the master-initiated and (See Page 4-26 wherein OraRep's manually pushing the changes made at a given master

site by calling the EXECUTE procedure to forward any changes made since the last time changes were propagated from the site, either manually or automatically is equivalent to the Applicant's **the set of data of the second transaction comprises data for performing push-style or push-pull-style synchronization**).

As per claim 43, OraRep teaches **"the step of executing the remote database transaction in the second database in response to the second transaction, wherein the remote database transaction is a request to the first database to transfer data to the second database"** (See Pages 1-4 and 4-26 wherein OraRep's master site propagates, or pushes its changes to every other master sites for the replication group for the master-initiated and manually pushes the changes made at a given master site by calling the EXECUTE procedure to forward any changes made since the last time changes were propagated from the site, either manually or automatically is equivalent to the Applicant's **the step of executing the remote database transaction in the second database in response to the second transaction, wherein the remote database transaction is a request to the first database to transfer data to the second database**).

9. Claims 10-12 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over OraRep (Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®, hereafter "OraRep") as applied to claims 1 and 26 above, and further in view of OraNet (Oracle®

Advanced Networking Option™, Administrator's Guide, Release 2.3.3, Part No. A48511-1, ORACLE®, 1996, hereafter "OraNet").

As per claims 10 and 31, OraRep does not specifically teach **"method is compatible with at least one of the following communication specifications: TCP/IP, CDMA, GSM, HSCSD, GPRS, WCDMA, EDGE, UMTS, Bluetooth, Teldesic, Iridium, Inmarsat, WLAN, DIGI-TV and imode"**, although OraRep teaches a generic network as a compatible configuration for database replication system at Fig. 1-1 in Page 1-2.

However, OraNet teaches "method is compatible with at least one of the following communication specifications: TCP/IP, CDMA, GSM, HSCSD, GPRS, WCDMA, EDGE, UMTS, Bluetooth, Teldesic, Iridium, Inmarsat, WLAN, DIGI-TV and imode" at Page 14-2 by showing TCP/IP protocol is utilized for database network.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine OraNet's reference into OraRep's by combining the advanced Oracle network option into replicated database system because the replication system is built on a generic network (OraRep: Page 1-2) and the Oracle network option is implemented on TCP/IP protocol. The combination of the references would have implemented the replication database system on a most scalable communication protocol known to ordinary skilled in the art.

As per claims 11 and 32, the combined teaching of OraRep and OraNet references further teaches **"compatible with at least one of the following operating systems**

and is used in at least one terminal including an application, replica database of the database system Unix, MS-Windows, EPOC, NT, MSCE, Linux, PalmOS, GEOS, VxWorks, Pocket PC and any upgrade of these" (See OraNet: Page 6-3 by describing UNIX as a database server platform).

As per claims 12 and 33, the combined teaching of OraRep and OraNet references further teaches **"at least one of the following operating systems is used in at least one server including an application master database of the database system: Unix, MS-Windows, VxWorks, NT and Linux and any upgrade of these"** (See OraNet: Page 6-3 by describing UNIX as a database server platform).

As per claim 30, the combined teaching of OraRep and OraNet references further teaches **"a storage medium is a memory and/or a disk"** (See OraNet: Page 17-5 by showing disk or tape is utilized for saving database objects).

Response to Arguments

10. The Applicants' arguments filed on July 14, 2005 have been fully considered but they are not persuasive, for the Examiner's response, please see discussion below:

a). At Pages 14-18, the Applicant assessed the features of Oracle database symmetric and asymmetric replication.

As to the above assessment in item a), the Examiner respectfully agreed.

b). At Page 18, concerning claims 1 and 26, the Applicant argued that the OraRep reference does not disclose transaction trigger including attributes is linked into said first transaction.

As to the above argument in item b), the Examiner respectfully submits that the trigger fired at Page 1-12, Section Deferred Transactions and Page 2-3, Para. Asynchronous in responding database change is a transaction trigger. Please note a database (table) row change is self a transaction. Please note that a single step of row-level change may cause additional multiple row-level changes via pre-determined constraints, for example, parent-child relation. As for "transaction trigger including attributes", the Examiner respectfully submitted that transaction trigger including attributes is not part of the claimed subject matter.

c). At Page 19, concerning claims 1 and 26, the Applicant argued that the trigger in the Applicant's claimed subject matter is transactional level and defined by the programmer, and the trigger fires as a whole operation and not a single operation of it.

As to the above argument in item c), the Examiner respectfully submits that the above subject matter is a further refinement of the claimed subject matter in the claims' limitations. The Examiner further respectfully submits that the each limitation in the claims has been given the broadest reasonable interpretation consistent with the specification and in light of the supporting disclosure in the Action (See MPEP , 2106 [R-2], 2111 [R-1]). Please further note In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but

not recited in the claim are not read into the claim. > E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily).

d). At Page 19, concerning claims 1 and 26, the Applicant argued OraRep does not disclose a third transaction invoked.

As to the above argument in item d), the Examiner respectfully submits that the above third transaction is not part of currently amended subject matter.

11. As to dependent claims (2-12, 14, 17 and 43) and (27-35), which directly or indirectly depend on claims 1 and 26, respectively, the Examiner applies the above stated arguments for the respective claim upon which they depend.

12. In light of the forgoing arguments, the 35 U.S.C. 103 rejections for claims 1-12, 14, 17, 26-35 and 43 is hereby sustained.

13. The prior art made of record

- U. Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®
- V. Oracle® Advanced Networking Option™, Administrator's Guide, Release 2.3.3, Part No. A48511-1, ORACLE®, 1996

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. U.S. Publication 2003/0208511


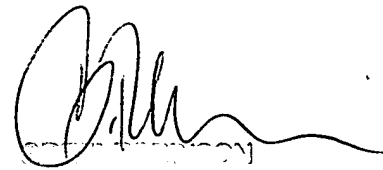
Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:00 am-5:00 pm). If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jean R. Homere, Esq. can be reached on (571) 272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for Page 13 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).

Kuen S. Lu
Patent Examiner

January 10, 2006



Jean R. Homere, Esq.
Supervisor